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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/739,367

12/19/2000

David G. Steer

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CANADA

EXAMINER

BLOUNT, STEVEN

ART UNIT

PAPER NUMBER

2661

DATE MAILED: 06/04/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/739,367

Applicant(s)

STEER ET AL.

Examiner

Steven Blount

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/19/00.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16-27 and 29 is/are allowed.
- 6) ☒ Claim(s) 1-15 and 28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3 – 5, 7 – 9, 11 – 13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,512,758 to Sato et al in view of U.S. patent 6,603,826 to Cupo et al and the Applicants Admitted Prior Art (AAPA)

With regard to claim 1, Sato et al teaches, in an OFDM environment (see title and abstract), transmitting data to a remote unit (col 7 line 20) wherein the remote unit performs error detection (col 7 line 45). If there is an error, then a retransmission requirement signal is sent to the transmitter (col 7 lines 46+) whereupon the transmitter (ie, base station) "transmits the retransmitting OFDM data symbol" (col 8 lines 9+). It is noted that determining the correct address (and if it can be determined reliably) would be an obvious necessity in the overall process taught in Sato, especially since if the address cannot be determined correctly, then the transmitter (base station) would not know where to send the packet upon transmission. Further, note that the remote unit would need to know if it is the intended recipient when deciding whether to accept the packet (unless it is a broadcast message, which does not appear to be the case in Sato et al).

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While Sato et al teaches error detection (and teaches that it may be corrected, since it says that Reed-Solomon coding and convolutional codes (ie, FEC codes which allow for error correction) may be used to code the transmitted data (see col 14 lines 11+), Sato et al does not teach that error correction may be performed by soft combined, as required in line 12 of claim 1.

Cupo et al teaches, in an OFDM environment (col 2 line 50) performing error correction through the use of soft combining. See col 8 lines 11+. Note that soft combining would make obvious the determination that a received symbol is retransmitted symbol as opposed to an originally transmitted symbol. Although Cupo et al teaches soft combining, Cupo et al (and, obviously, Sato et al) does not explicitly teach the soft combining to include storing the packet in a buffer (last sentence of the claim).

Applicants Admitted Prior art, on page 2, lines 4+, teaches that "Soft symbol combining is a technique by which an entire symbol is retransmitted and the remote unit combines two samples of a symbol, the originally transmitted symbol and the retransmitted symbol, before decoding the symbol in order to reduce the likelihood of errors"; the examiner submits that the process described above would essentially require the storage of the packet in a buffer.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided the communication system of Sato et al with a means for correcting errors which involves soft combining, in light of the teachings of Cupo et al

and AAPA, in order to provide a better means for correcting errors in an OFDM environment.

With regard to claim 3, it is well known that packets have identifiers (ie, addresses) and the request to retransmit the symbol would render obvious including a symbol number as well.

With regard to claim 4, the data is both Reed Solomon coded, and scrambled. See col 13 and 14.

With regard to claim 5, see the rejection above, and further note that the process described in Cupo et al requires a decoder (and one is mentioned in the AAPA).

With regard to claims 7 – 8, see the rejections of claims 2 – 4 above.

With regard to claims 9 and 11 – 12, see the rejection of claims 1 – 4 above.

With regard to claims 13, see the rejection of claims 1 – 2 above.

With regard to claim 15, see the rejection of claim 1.

3. Claims 2, 6, 10, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,512,758 to Sato et al in view of U.S. patent 6,603,826 to Cupo et al and the Applicants Admitted Prior Art (AAPA) as applied above, and further in view of U.S. patent 6,418,143 to Rezaiifar et al.

Sato et al/Cupo et al/AAPA teach the invention as described above, but do not teach use of a retransmission bit to indicate a received symbol being a retransmitted one. Such a retransmission bit is taught in Rezaiffer et al. It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided Sato et

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al/Cupo et al/AAPA with a retransmission bit in light of the teachings of Rezaiifar et al in order to be able to assist the soft combining process in its error correction process.

4. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,512,758 to Sato et al in view of U.S. patent 6,359,877 to Rathonyi et al.


Sato et al teach the invention as described above (and also teaches reordering packets in col 3 lines 43+), but do not teach generating a symbol serial number from timing information.

Rathonyi et al teach generating a sequence number (similar to a serial number) through the use of changes of rate of information delivery in time. See col 9 lines 34+.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have numbered the packets of Sato et al through the use of timing information in light of the teachings Rathonyi et al in order to help assure an ordered delivery of information in the communication system.

5. Claims 16 – 27 and 29 are allowed.

6. Steven Blount may be reached at 703-305-0319 Monday through Friday between the hours of 9:00 and 5:30.


Ali Patel
Primary Examiner

SB


5/21/04